

REMARKS

Claims 1-5, 7-44, 46 and 47 are pending in this application. Claims 29-43, previously withdrawn from consideration pursuant to 37 C.F.R. § 1.142(b) as being drawn to a non-elected invention, have been canceled without prejudice by the present Amendment. Claims 1-5, 7-28, 46 and 47 have been allowed and claim 44 stands rejected.

REJECTION UNDER 35 U.S.C. § 102

Reconsideration is respectfully requested of the rejection of claim 44 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,593,185 ("Tsai").

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); M.P.E.P. § 2131.

Applicants respectfully submit that claim 44 is not anticipated by Tsai. Claim 44 recites a method for fabricating a MIM capacitor that includes "depositing a sidewall liner material in the first and second vias, and removing a predetermined portion of the sidewall liner material to form spacers on each sidewall of the first and second vias."

Referring to the liner layer 28 shown in Fig. 4 and a discussion of the planarization of the liner layer 28, the Examiner maintains that claim 44 is anticipated by Tsai. See Tsai, col. 5, lines 12-16; Fig. 4. However, Applicants respectfully disagree with the Examiner and submit that the limitations of claim 44 are not anticipated by Tsai.

Claim 44 requires that a portion of the sidewall liner material be removed to form spacers on each sidewall of first and second vias. See, e.g., page 10, lines 23-27; Figs. 17-18 (reference numbers 380 and 390). Tsai does not disclose or suggest this process. In contrast, Tsai shows a liner layer 28 which is deposited in a trench 22, a via 24 and an opening 26 such that the liner layer 28 lines both the sides and bottom of each of the trench 22, via 24 and opening 26. See Tsai, Figs. 4 -10. However, referring to, for example, Figs. 17 and 18 of Applicants' disclosure, the sidewall liner material 380 is removed from the bottom of the openings 370A and 370B, leaving only the spacers 390 on the sidewalls of the openings 370A and 370B. Therefore, unlike the embodiment recited in claim 44, Tsai does not teach removal of a portion of the liner material to form spacers on sidewalls of the openings. Indeed, as shown in Figs. 4 -10 of Tsai, the liner material is not removed from the trench, via or opening once it is deposited therein.

The Examiner maintains that the discussion of planarizing the liner layer 28 at col. 5, lines 12-14 results in Tsai teaching removal of a portion of the sidewall liner material to form the sidewall spacers. However, Tsai states that after depositing liner layer 28 in trench 22, via 24 and opening 26, a copper metal layer is deposited to fill the trench 22, via 24 and opening 26 and from contacts 30 and 32. As can be seen from Fig. 4, for example, the copper metal layer is deposited over the liner layer 28. After depositing the copper metal layer, the excess copper layer and liner layer 28 are planarized, wherein the hard mask layer 20 is used as a stop layer for the polishing process. See col. 5, lines 4-16. Accordingly, the presence of the copper metal layer and the stop layer 20 prevent the bottom portion of the liner layer 28 from being

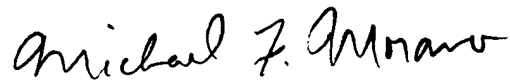
planarized. Accordingly, in contrast to the Examiner's argument, the polishing discussed in Tsai does not result in removal of the liner layer 28 to form sidewall spacers such as those recited in claim 44.

Indeed, unlike the disclosure in Tsai, removal of the portion of the liner material to form sidewall spacers occurs prior to formation of any contact regions. See, e.g., Figs. 17, 18 and 21. Therefore, Tsai not only fails to disclose the limitations of claim 44, Tsai also teaches away from same by disclosing formation of the contact region right after depositing the liner layer, which renders it impossible to planarize and remove any portion of the liner layer in the trench, opening or via and form sidewall spacers therein.

Therefore, in contrast to the Examiner's assertion, Tsai does not disclose "removing a predetermined portion of the sidewall liner material to form spacers on each sidewall of the first and second vias", as recited in claim 44. Indeed, Tsai teaches away from the claimed method. As such, Applicants respectfully submit that claim 44 is not anticipated by Tsai and respectfully request that the Examiner withdraw the rejection of claim 44 under 35 U.S.C. § 102(e).

An early and favorable reconsideration is earnestly solicited. If the Examiner has any further questions or comments, it is suggested that the Examiner telephone Applicants' Attorney to reach a prompt disposition of this application.

Respectfully submitted,

A handwritten signature in cursive script, reading "Michael F. Morano". The signature is written in dark ink and is positioned above a horizontal line.

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